

AMENDMENTS TO THE CLAIMS

The following is a complete, marked-up listing of revised claims with a status identifier in parenthesis, underlined text indicating insertions, and strike through and/or double-bracketed text indicating deletions.

LISTING OF CLAIMS

1. (Previously Presented) A method of manufacturing a micro reactor device that includes a tubular reactor as a flow path and allows reaction species to react in the reactor, the method comprising the step of:

forming a particle layer including particles on an inner wall of the reactor by causing a dispersion liquid of particles to flow through the reactor and drying the reactor.

2. (Cancelled)

3. (Previously Presented) The method as set forth in claim 1, wherein in the particle layer, the particles are aligned regularly.

4. (Previously Presented) The method as set forth in claim 1, wherein a solvent of the dispersion liquid is a mixed solvent including at least two kinds of solvents.

5. (Previously Presented) The method as set forth in claim 1, wherein the flow path has a cross section of a round or elliptical shape.

6. (Previously Presented) The method as set forth in claim 1, wherein the particles are a catalyst.

7. (Previously Presented) The method as set forth in claim 1, wherein a catalyst is supported by the particle layer.

8. (Previously Presented) The method as set forth in claim 1, wherein the particle layer includes composite particles formed by supporting a functional material by the particles.

9. (Previously Presented) The method as set forth in claim 8, wherein in the composite particles, the functional material covers the particles.

10. (Previously Presented) The method as set forth in claim 8, wherein the composite particles are formed by a heterocoagulation method.

11. (Previously Presented) The method as set forth in claim 8, wherein the composite particles are formed by controlling a surface charge of the particles by a surface-active agent.

12. (Previously Presented) The method as set forth in claim 1, wherein a hydrophilicity process and a hydrophobicity process are performed on desired regions of the inner wall of the reactor, and a water dispersion liquid of particles is caused to flow through the reactor.

13. (Previously Presented) The method as set forth in claim 12, wherein the particles are a conductive material, and electrodes are formed by sintering the particles.

14. (Previously Presented) The method as set forth in claim 1, wherein using the particle layer as a mold, a layer is formed by filling spaces between the particles of the particle layer with sol or nanoparticles and solidifying the sol or nanoparticles, and the particles of the particle layer are removed.

15. (Previously Presented) The method as set forth in claim 14, wherein the particles are removed by thermal decomposition.

16. (Previously Presented) The method as set forth in claim 14, wherein a catalyst is supported by the layer formed by filling and solidifying the sol or nanoparticles.

17. (Previously Presented) A micro reactor device, comprising a tubular reactor as a flow path, for allowing reaction species to react in the reactor, the micro reactor device further comprising:

a particle layer including particles, provided on an inner wall of the reactor, the particles being composite particles supporting a functional material.

18. (Previously Presented) The micro reactor device as set forth in claim 17, wherein

in the particle layer, the particles are aligned regularly.

19. (Previously Presented) The micro reactor device as set forth in claim 17,
wherein

the flow path has a diameter between 1 μm and 1mm.

20. (Previously Presented) The micro reactor device as set forth in claim 17,
wherein

the particles of the particle layer have a diameter between 1nm and 10 μm .

21. (Previously Presented) The micro reactor device as set forth in claim 17,
wherein

the particle layer has a thickness of not more than 20 μm .

22. (Previously Presented) The micro reactor device as set forth in claim 17,
wherein

the particles are a catalyst.

23. (Cancelled)

24. (Previously Presented) The micro reactor device as set forth in claim 17,
wherein

the composite particles are covered particles that are the particles covered
with the functional material.

25. (Previously Presented) The micro reactor device as set forth in claim 17, wherein

the particle layer is patterned.

26. (Withdrawn) A micro reactor device, comprising a tubular reactor as a flow path, for allowing reaction species to react in the reactor, the micro reactor device further comprising:

electrodes made of particles, provided on an inner wall of the reactor.

27. (Withdrawn) The micro reactor device as set forth in claim 26, wherein the electrodes are patterned.

28. (Withdrawn) A micro reactor device, comprising a tubular reactor as a flow path, for allowing reaction species to react in the reactor, the micro reactor device further comprising:

a layer having particle-shaped pores, provided on an inner wall of the reactor.

29. (Withdrawn) The micro reactor device as set forth in claim 28, wherein the particle-shaped pores are aligned regularly.